

P21 Sensitivity study of tropical cyclone activity for a long-term simulation using MPAS_VM with 120-23km.

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Physics sensitivity simulations were conducted from May 1997 to April 1999 to evaluate the TC activity over North West Pacific Ocean. To evaluate physics sensitivities, a variable resolution mesh from 120km to 23km (MPAS_VM) and combinations of KF and Tiedtke with CAM and RRTM radiation were used.

The simulations with Tiedtke produced only very weak intensity TCs and there are locations of excessive rainfall. Tiedtke is good for 4km grid spacing, but we run at 23km and sensitivity simulations suggest KF captures better intensity TCs and reasonable rainfall patterns. However, TC frequency and also rainfall are overestimated. These overestimation are explored by modifying the KF trigger function.